22 Sep 1992

OSSMG-B

OSCILLOSCOPE, STORAGE

1. GENERAL. This procurement requires a general-purpose, dual-trace, storage oscilloscope with a dual time base and differential capabilities.

2. CLASSIFICATION. Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3. OPERATIONAL REQUIREMENTS. The equipment shall be capable of operation within the minimum accuracies, limits, and specifications contained below.

3.1 Vertical system. The oscilloscope vertical system shall consist of two identical input channels with differential and comparator capability.

3.1.1 Bandwidth. DC to 50 MHz. AC coupled low-frequency roll off: 10 Hz or less.

3.1.2 Deflection factor. 5 mV/div to 5 V/div continuously variable between calibrated steps. Accuracy: ±1.5% of setting. An uncalibrated condition indicator is required.

3.1.2.1 Maximum input voltages.

a. DC coupled: 1 V/div to 5 V/div: ±500V (dc + peak ac at 1 kHz) derating to no less than ±40V (dc + peak ac at 1 kHz).

b. AC coupled: ±500V. (dc + peak ac at 1 kHz).

3.1.2.2 Common mode rejection ratio. The common mode rejection ratio shall be at least 20,000 to 1 from dc to 100 kHz.

3.1.3 Comparison voltage. An internal comparison voltage source is required. Range: 0 to 10V positive and negative. Resolution: 4 digits. Accuracy: ±(0.1% of setting + 3 mV).

3.2 Horizontal system.

3.2.1 Main sweep. 50 ns/div to 5 s/div continuously variable between calibrated steps. Accu racy: ±4.0% of setting. An uncalibrated condition indicator is required.

3.2.2 Main triggering. The equipment shall be provided with selectable main trigger modes of auto, normal, and single sweep. Selectable couplings of AC, AC-LF reject, AC-HF reject, and DC shall be provided. Selectable trigger sources of internal, line, external, and external divided by 10 shall be provided.

3.2.2.1 Auto and normal mode sensitivity.

a. AC selected: 0.3 division internal or 100 mV external from 30 Hz to 10 MHz and 1.5 divisions internal or 500 mV external from 10 MHz to 100 MHz.

b. AC-HF reject selected: 0.3 division internal or 100 mV external from 30 Hz to 50 kHz.

c. DC selected: 0.3 division internal or 100 mV external from DC to 10 MHz and 1.5 divisions internal or 500 mV external from 10 MHz to 100 MHz.

d. AC-LF reject selected: Internal 0.3 div, 30 kHz to 10 MHz and 1.5 div, 10 MHz to 100 MHz; external 100 mV, 150 kHz to 10 MHz and 500 mV, 10 MHz to 100 MHz.

3.2.2.2 Internal trigger jitter. The internal trigger jitter shall not exceed 1 ns at 75 MHz.

3.2.2.3 External trigger. The trigger level range shall be at least ±1.5V in the external position and ±15V in the external divided-by-10 position. The inputs shall withstand 500V (dc + peak ac).

3.3 CRT display.

3.3.1 Automatic focus. Automatic focusing shall eliminate the need for manual focusing of the display with changes in intensity following an initial adjustment.

3.3.2 Beam finder. A beam finder control shall permit display centering while limiting the display to the graticule area.

3.3.3 CRT storage display. The equipment shall be capable of variable persistence to extend viewing time to 15s minimum.

3.4 Outputs.

3.4.1 Calibrator. A calibrator signal shall be provided through a front-
panel connector that is compatible with the specified probes. The calibrator voltage shall be regulated to within ±1% at 15°C to 35°C and when loaded by the specified vertical amplifiers. The calibrator shall have protection from damage when grounded.

3.5 Probes. Two X1 probes shall be provided and shall be compatible with the vertical amplifiers specified.

4. GENERAL REQUIREMENTS.

4.1 Power source. MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 200W.

4.2 Weight. 20 kg (44 lbs) maximum.

4.3 Lithium batteries. Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.